What is claimed is:

1. A method for objective measurement of video quality using a wavelet transform, comprising:

a 2-dimensional wavelet transform that is applied to each frame of a source video and each frame of a processed video, producing source video wavelet coefficients for each frame of said source video and processed video wavelet coefficients for each frame of said processed video;

difference computing means that computes a subband difference in each subband block by summing differences between said source video wavelet coefficients and said processed video wavelet coefficients in each subband block of said 2-dimensional wavelet transform and represents subband differences as a difference vector for each frame, producing a sequence of difference vectors for said source video and said processed video;

combining means that combines said sequence of difference vectors and produces a final difference vector; and

weighting means that produces a number, which is used as an objective score for objective measurement of video quality, by calculating a weighted sum of the elements of said final difference vector.

2. A method for objective measurement of video quality using a modified 3-dimensional wavelet transform, comprising:

a 2-dimensional wavelet transform that is applied to each frame of a source video and each frame of a processed video, producing source video wavelet coefficients for each frame of said source video and processed video wavelet coefficients for each frame of said processed video;

difference computing means that computes a subband difference in each subband block by summing differences between said source video wavelet coefficients and said processed video wavelet coefficients in each subband block of said 2-dimensional wavelet transform and represents subband differences as a difference vector for each frame, producing a sequence of difference vectors for said source video and said processed video;

a 1-dimensional wavelet transform that is applied to said sequence of difference vectors in a temporal direction, producing a second sequence of difference vectors;

combining means that combines said second sequence of difference vectors and produces a final difference vector; and

weighting means that produces a number, which is used as an objective score for objective measurement of video quality, by calculating a weighted sum of the elements of said final difference vector.

3. A optimization method that finds the best linear combination of various parameters that are obtained for objective measurement of video quality, comprising:

a plurality of subjective scores that are represented as a random variable x;

a plurality of objective parameter vectors that are represented as a random vector D;

eigenvector computing means that computes the eigenvectors of $\Sigma_D^{-1}\Sigma_Q$ where Σ_D is the covariance matrix of said objective parameter vectors, $\Sigma_Q = QQ^T$, and $Q = E(xD)$;

optimal weight selecting means that selects, from the eigenvectors of $\Sigma_D^{-1}\Sigma_Q$, the eigenvector that corresponds to the largest eigenvalue of $\Sigma_D^{-1}\Sigma_Q$ as an optimal weight vector W_{opt}; and

objective score producing means that produces a number, which is used as an objective score for objective measurement of video quality, by computing $W_{opt}^{T}V_p$ where V_p is an objective parameter vector.

4. A method for objective measurement of video quality using spatial and temporal frequency differences, comprising:

frequency difference computing means that computes spatial and temporal frequency differences between a source video and a processed video, producing a frequency difference vector for said source video and said processed video;

weighting means that produces a number, which is used as an objective score for objective measurement of video quality, by calculating a weighted sum of the elements of said frequency difference vector.

5. The method in accordance with claim 4 wherein said frequency difference computing means applies a transform to said source video and said processed video and computes coefficient differences, producing said frequency difference vector.

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